District I
1625 N French Dr , Hobbs, NM 88240
District II
1301 W Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S St Francis Dr , Santa Fe, NM 87505

# State of New Mexico Energy Minerals and Natural Resources Department Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.
For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

### <u>Pit, Closed-Loop System, Below-Grade Tank, or</u> <u>Proposed Alternative Method Permit or Closure Plan Application</u>

Existing BGT Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method
☐ Modification to an existing permit ☐ Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system,
below-grade tank, or proposed alternative method
Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request
Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances
Operator: XTO ENERGY, INC. OGRID #: 5380
Address: #382 County Road 3100, Aztec, NM 87410
Facility or well name: WF Federal 3 #2
API Number: 30-045-30168 OCD Permit Number:
U/L or Qtr/Qtr L Section 3 Township 29N Range 14W County: San Juan
Center of Proposed Design: Latitude <u>36 75384</u> Longitude <u>108.30347</u> NAD: <u>1927 1983</u>
Surface Owner: X Federal  State  Tribal Trust or Indian Allotment
2.
Pit: Subsection F or G of 19.15.17.11 NMAC
Temporary:  Drilling  Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A
Lined Unlined Liner type: Thicknessmil LLDPE HDPE PVC Other
☐ String-Reinforced
Liner Seams: Welded Factory Other Volume: bbl Dimensions: L x W x D
3.  Closed-loop System: Subsection H of 19.15.17.11 NMAC
Type of Operation: P&A Drilling a new well Workover or Drilling (Applies to activities which require prior approval of a permit or notice of
intent)
☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other
Lined Unlined Liner type: Thickness mil LLDPE HDPE PVC Other
Liner Seams: Welded Factory Other RECEIVED
X Below-grade tank: Subsection I of 19.15.17.11 NMAC OIL CONS, DIV. DIST 3
Subsection I of 19.15.17.11 NMAC   Subsection I o
Tank Construction material: Steel  Secondary containment with leak detection Visible sidewalls liner 6-inch lift and automatic overflow shut-off
Secondary containment with leak detection  Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☒ Other Visible sidewalls, secondary containment, automatic overflow shut off
Visible sidewalls and filler Visible sidewalls only
Liner type: Thicknessmil
·

Fencing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks)  Chain link, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, institution or church)  Sour foot height, four strands of barbed wire evenly spaced between one and four feet  Alternate. Please specify	hospital,
Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)  Screen Netting Other  Monthly inspections (If netting or screening is not physically feasible)	
8.  Signs: Subsection C of 19.15.17.11 NMAC  12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers  Signed in compliance with 19.15.3.103 NMAC	
Administrative Approvals and Exceptions:  Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.  Please check a box if one or more of the following is requested, if not leave blank:  Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau of consideration of approval. Fencing- Hogwire  Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.	office for
Siting Criteria (regarding permitting): 19.15.17.10 NMAC Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of accept material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying above-grade tanks associated with a closed-loop system.	priate district pproval.
Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank.  - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes 🏻 No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).  - Topographic map; Visual inspection (certification) of the proposed site	Yes X No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.  (Applies to temporary, emergency, or cavitation pits and below-grade tanks)  - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes 🕅 No ☐ NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.  (Applies to permanent pits)  - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No ☑ NA
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.  - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	Yes X No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.  - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☒ No
Within 500 feet of a wetland.  - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes 🛛 No
Within the area overlying a subsurface mine.  - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes 🛚 No
Within an unstable area.  - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes 🗶 No
Within a 100-year floodplain FEMA map	☐ Yes 🗶 No

Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC  Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.    Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC   Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC   Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC   Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC   Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC   Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC    Previously Approved Design (attach copy of design)   API Number:
12.
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC  Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.  Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9  Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC  Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC  Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC  Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
Previously Approved Design (attach copy of design) API Number:
Previously Approved Operating and Maintenance Plan API Number: (Applies only to closed-loop system that use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)
Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC   Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.   Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC   Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC   Climatological Factors Assessment   Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC   Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC   Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC   Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC   Quality Control/Quality Assurance Construction and Installation Plan   Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC   Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC   Nuisance or Hazardous Odors, including H <sub>2</sub> S, Prevention Plan   Emergency Response Plan   Oil Field Waste Stream Characterization   Monitoring and Inspection Plan   Erosion Control Plan   Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
Proposed Closure: 19.15.17.13 NMAC
Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.  Type: Drilling Workover Emergency Cavitation P&A Permanent Pit Below-grade Tank Closed-loop System Alternative
Proposed Closure Method:  Waste Excavation and Removal Waste Removal (Closed-loop systems only) On-site Closure Method (Only for temporary pits and closed-loop systems) In-place Burial On-site Trench Burial Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.  ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings) ☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground S Instructions: Please indentify the facility or facilities for the disposal of liquids, diffacilities are required.		
*	Disposal Facility Permit Number:	
	Disposal Facility Permit Number:	
Will any of the proposed closed-loop system operations and associated activities occ  ☐ Yes (If yes, please provide the information below) ☐ No	ur on or in areas that will not be used for future serv	ice and operations?
Required for impacted areas which will not be used for future service and operation.  Soil Backfill and Cover Design Specifications based upon the appropriate requirements of Subsection I  Site Reclamation Plan - based upon the appropriate requirements of Subsection	requirements of Subsection H of 19.15.17.13 NMAC of 19.15.17.13 NMAC	
Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the considered below. Requests regarding changes to certain siting criteria may require considered an exception which must be submitted to the Santa Fe Environmental demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for	administrative approval from the appropriate distr Bureau office for consideration of approval. Justij	rict office or may be
Ground water is less than 50 feet below the bottom of the buried waste.  - NM Office of the State Engineer - iWATERS database search; USGS; Data	obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data	obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is more than 100 feet below the bottom of the buried waste.  - NM Office of the State Engineer - iWATERS database search; USGS; Data	obtained from nearby wells	☐ Yes ☐ No ☐ NA
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other sign lake (measured from the ordinary high-water mark).  - Topographic map; Visual inspection (certification) of the proposed site	ificant watercourse or lakebed, sinkhole, or playa	Yes No
Within 300 feet from a permanent residence, school, hospital, institution, or church a Visual inspection (certification) of the proposed site; Aerial photo; Satellite		☐ Yes ☐ No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less watering purposes, or within 1000 horizontal feet of any other fresh water well or sp  - NM Office of the State Engineer - iWATERS database; Visual inspection (co	ring, in existence at the time of initial application.	Yes No
Within incorporated municipal boundaries or within a defined municipal fresh water adopted pursuant to NMSA 1978, Section 3-27-3, as amended.  - Written confirmation or verification from the municipality; Written approva		Yes No
Within 500 feet of a wetland US Fish and Wildlife Wetland Identification map; Topographic map; Visual	inspection (certification) of the proposed site	☐ Yes ☐ No
Within the area overlying a subsurface mine Written confirmation or verification or map from the NM EMNRD-Mining	and Mineral Division	☐ Yes ☐ No
<ul> <li>Within an unstable area.</li> <li>Engineering measures incorporated into the design; NM Bureau of Geology Society; Topographic map</li> </ul>	& Mineral Resources; USGS; NM Geological	☐ Yes ☐ No
Within a 100-year floodplain FEMA map		☐ Yes ☐ No
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the by a check mark in the box, that the documents are attached.  Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Protocols and Procedures - based upon the appropriate requirements of 19.15.  Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Suste Material Sampling Plan - based upon the appropriate requirements of Soil Cover Design - based upon the appropriate requirements of Subsection I Re-vegetation Plan - based upon the appropriate requirements of Subsection I Site Reclamation Plan - based upon the appropriate requirements of Subsection I	irements of 19.15.17.10 NMAC Subsection F of 19.15.17.13 NMAC oropriate requirements of 19.15.17.11 NMAC d) - based upon the appropriate requirements of 19. 17.13 NMAC irements of Subsection F of 19.15.17.13 NMAC Subsection F of 19.15.17.13 NMAC ill cuttings or in case on-site closure standards cannot of 19.15.17.13 NMAC of 19.15.17.13 NMAC	15.17.11 NMAC

19. Operator Application Certification:	
I hereby certify that the information submitted with this application is true, accur	ate and complete to the best of my knowledge and belief.
Name (Print): Kim Champlin	Title: Environmental Representative
Signature: Kim Champlin	
e-mail address: kim_champlin@xtoenergy.com	Telephone: (505) 333-3100
20.  OCD Approva!: (☐ Permit Application (including closure plan) ☐ Closure P	lan (only) OCD Conditions (see attachment)
OCD Representative Signature: Bull bull	Approval Date: <u>⟨०~7~08</u>
Title: Enviro/spec	OCD Permit Number:
Closure Report (required within 60 days of closure completion): Subsection Instructions: Operators are required to obtain an approved closure plan prior to the closure report is required to be submitted to the division within 60 days of to section of the form until an approved closure plan has been obtained and the closure plan	to implementing any closure activities and submitting the closure report. the completion of the closure activities. Please do not complete this osure activities have been completed.
	Closure Completion Date:
22.  Closure Method:  Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternate ☐ If different from approved plan, please explain.	ative Closure Method
23. Closure Report Regarding Waste Removal Closure For Closed-loop Systems Instructions: Please indentify the facility or facilities for where the liquids, drift two facilities were utilized. Disposal Facility Name:	lling fluids and drill cuttings were disposed. Use attachment if more than
Disposal Facility Name:	Disposal Facility Permit Number:
Were the closed-loop system operations and associated activities performed on or Yes (If yes, please demonstrate compliance to the items below)	in areas that will not be used for future service and operations?
Required for impacted areas which will not be used for future service and operated.  Site Reclamation (Photo Documentation)  Soil Backfilling and Cover Installation  Re-vegetation Application Rates and Seeding Technique	ions:
Closure Report Attachment Checklist: Instructions: Each of the following it mark in the box, that the documents are attached.  Proof of Closure Notice (surface owner and division)  Proof of Deed Notice (required for on-site closure)  Plot Plan (for on-site closures and temporary pits)  Confirmation Sampling Analytical Results (if applicable)  Waste Material Sampling Analytical Results (required for on-site closure)  Disposal Facility Name and Permit Number  Soil Backfilling and Cover Installation  Re-vegetation Application Rates and Seeding Technique  Site Reclamation (Photo Documentation)  On-site Closure Location: Latitude	
25.	
Operator Closure Certification:  I hereby certify that the information and attachments submitted with this closure belief. I also certify that the closure complies with all applicable closure requirer	report is true, accurate and complete to the best of my knowledge and nents and conditions specified in the approved closure plan.
Name (Print):	Title:
Signature:	Date:
e-mail address:	Telephone:

PO Bur 1980, Hobbs, NM 88241-1980 DIMING TI

\* PO Drawer DD, Artesia, NM 88211-0719 District III

1000 Rio Bruzus Rd., Aztec, NM 87410 District (V

PO Bug 2088, Santa Fe, NM 87504-2088

### OIL CONSERVATION DIVISION PO Box 2088 Santa Fe, NM 87504-2088

Energy, Minerals & Natural Resources Department

Bautard Erhanny 21, 1991 Instructions on back Submit to Appropriate District Office State Lease - 4 Copies

\_\_\_AMENDED REPORT

Fee Lease - 3 Copies

### WELL LOCATION AND ACREAGE DEDICATION PLAT

API Numbe	t <b>r</b>	<sup>2</sup> Pool Code	* Pool Name	
30-045-	30/68	71629	BASIN FRUITLAND COAL -	
Property Code		¹ Pı	reporty Name	* Well Number
25983		· WF	Federal	3-2
'OCKID No.		' O <sub>1</sub>	perator Name	* Elevativa
019219		RICHARDSON (	OPERATING COMPANY	5435'

### 10 Surface Location

ſ	UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
	L·	3.	29 N	14' W		<b>2</b> 495	South	1290	West	San Juan
_				11 Bot	tom Hole	Location I	f Different Fro	om Surface		·

UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
13 Dedicated Acr	es " Joiat	or lafill "	Consolidatio	o Code 15 O	rder No.				
318.15 W/									

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED

O.	R A NON-STANDARD UNIT HAS B	BEEN APPROVED BY THE DIVISION
16		17 OPERATOR CERTIFICATION
	1	I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief
		Resident
		Signature BRIAN WOOD
	TO TO WEST	Printed Name CONSULTANT
	MAY 2  RECON CON  ON CON  OF THE CON  OF T	000 Title MAR. 5, 2000
	E RECO.	Date
- OH	Dist.	18SURVEYOR CERTIFICATION
1290'	W. Carrier	I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me
24951	11.01.5	or under my supervision, and that the same is true and correct to the best of my belief
24		Date of Survey WEAR
		Signature and Sal of Docessional Survivor
	1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		Sleed J. Hudden
		LARG
111		Certificate Number



### Pit Permit Siting Criteria Information Sheet

Client:	XTO Energy
Project:	Pit Permits
Revised:	8/20/2008
Prepared by:	Ashley Ager

V	Information Sheet	Prepared by:	Ashley Ager
API#:	30-045-30168	USPLSS:	T29N, R14W, S3L
Name:	WF Federal 3-2	Lat/Long:	36.753849450, -108.303474365
Depth to groundwater:	50-100'	Geologic formation:	Kirtland and Fruitland Formations
Distance to closest continuously flowing watercourse:	1.8 miles to the San Juan River		
Distance to closest significant watercourse, lakebed, playa lake, or sinkhole:	.23 Miles to the Dain Arroyo		
Permanent residence, school, hospital, institution or church within 300'	no	Soil Type:	Entisols
		Annual Precipitation:	8.08 average annual precipitation
Domestic fresh water well or spring within 500'	no	Precipitation Notes:	no significant precipitation event
Any other fresh water well or spring within 1000'	no	,	· ·
Within incorporated municipal boundaries	no	Attached Documents:	WF Federal 3-2 watercolumn.pdf
Within defined municipal fresh water well field	no		WF Federal 3-2 topo_FEMA_mines_water.pdf
Wetland within 500'	no	Mining Activity:	1.28 Miles from Pit No 72-10-N
Within unstable area	no		
Within 100 year flood plain	no	,	1
Additional Notes:			

### WF Federal 3 #2 Below Ground Tank Hydrogeologic Report for Siting Criteria

### General Geology and Hydrology

The San Juan Basin is a typical Rocky Mountain basin with a gently dipping southern flank and a steeply dipping northern flank. Asymmetrically layered Tertiary sandstones and shales, along with Quaternary alluvial deposits, dominate surficial geology (Dane and Bachman, 1965). The proposed pit location will be situated near Coolidge Arroyo, northeast of Twin Mounds and the town of Kirtland.

The predominant geologic formation is the Fruitland Formation/Kirtland Shale of Late Cretaceous age, which underlies surface soils and is often exposed as broad shalely hills (Dane and Bachman, 1965). Deposits of Quaternary alluvial sands also occur prominently near the surface of the area, especially near streams and washes. The Fruitland Formation consists of interbedded sandy shale, carbonaceous shale, sandstone and coal units. The Kirtland Shale is divided into a lower shale member, a middle sandstone unit and an upper sandy shale member. The two formations are difficult to differentiate and are often treated together. The combined thickness of the Fruitland-Kirtland interval ranges from 100 to 2000 feet (Stone et al., 1983).

Cretaceous and Tertiary sandstones, as well as Quaternary alluvial deposits serve as the primary aquifers in the San Juan Basin (Stone et al., 1983). Aquifers within the Fruitland-Kirtland Formations are primarily limited to the Farmington Sandstone Member, which is the middle unit within the Kirtland Shale. Reported discharge from stock wells is about 10 gallons per minute (Stone et al., 1983). The aquifer supplies low yielding stock wells.

The prominent soil type at the proposed site is enitsols, which are defined as soils that exhibit little to no profile development (www.emnrd.state.nm.us). Soils are basically unaltered from their parent rock. Miles of arroyos, washes and intermittent streams exist as part of the drainage network towards the San Juan River. These features often cut into soil and other unconsolidated materials, contributing to sedimentation downstream. The sudden influx of water from storm events easily erodes the soils that cover the area and prohibits effective recharge to the underlying aquifers.

Dry and arid weather further prohibit active recharge. The climate of the region is arid, averaging just over 8 inches of rainfall annually. As is typical of the southwestern United States monsoonal weather patterns, most precipitation falls from August through October. The heaviest rainfall occurs in the summer in isolated, intense cloudbursts. November through June is relatively dry. Snow generally falls from December to mid-February and averages less than one-half inch in depth. However, most recharge occurs during the winter months during snowmelt periods from the upper elevations (Western Regional Climate Center www.wrcc.dri.edu).

The predominant vegetation is sagebrush and grasses with a more restricted pinon-juniper association (Dick-Peddie, 1993).

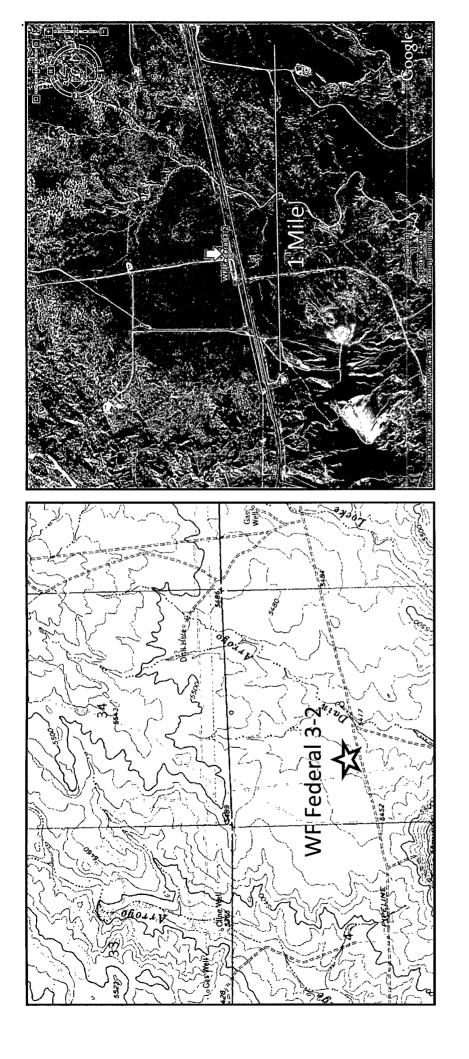
### Site Specific Hydrogeology

Depth to groundwater is estimated to be between 50 and 100 feet. This estimation is based on data from Stone and others (1983), the USGS Groundwater Atlas of the United States and depth to groundwater data published on the New Mexico State Engineer's iWaters Database website. Local topography and proximity to surface hydrologic features are also taken into consideration.

Beds of water-yielding sandstone are primarily confined to the Farmington Sandstone Member of the Fruitland Formation, which is 20-480 feet thick (Stone et al., 1983). The site is located in a shalely unit of the Fruitland Formation, as evidenced by the relatively flat topography that is easily eroded by arroyos. The eroded surfaces of the arroyos do not expose thick sequences of sandstone outcrops, the presence of which might indicate a water-bearing unit within the immediate subsurface.

This rural site location does not contain an abundant amount of groundwater elevation data. Groundwater data available from the NM State Engineer's iWaters Database for wells near the proposed site are attached. Wells located at similar elevations and distances from the San Juan River contain groundwater at depths ranging from 30 to 90 feet. The site in question is located on a relatively flat area at an elevation of approximately 5447 feet. Elevations within the closest arroyo are 117 feet lower, and the San Juan River is 250 feet lower in elevation.

Since real groundwater data are lacking, local topographic features and geologic formations must be used to estimate depth to groundwater at the proposed site. Exposures of shale at the surface and within channel cuts of arroyos suggest groundwater is restricted to deeper sandstone units. However, proximity of the site to the San Juan River should also be considered. Groundwater data recorded from wells drilled at similar distances from the River and within comparable topographic settings is greater than 50 feet. Therefore, depth to groundwater is estimated to be between 50 and 100 feet.



San Juan County, NM WF Federal 3-2 T29N, R14W, S3L Lodestar Services, Inc Durango, CO 81302 PO Box 4465

Aerial Photograph Topographic Map and



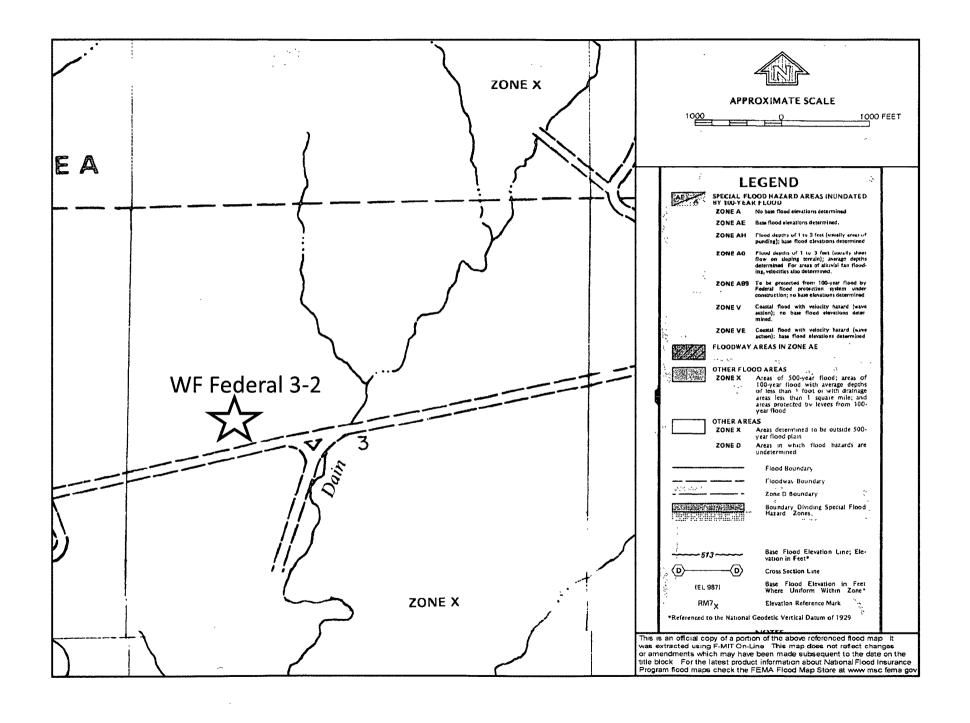
### New Mexico Office of the State Engineer POD Reports and Downloads

Township: <sup>J</sup>	Range: 14V Sections		grand and a second a second and
NAD27 X:	Y: Zone:	Search Radius	:1
County: B	asin:	Number:	Suffix:
Owner Name: (First)	(Last)	Non-Domestic C	Domestic All
POD / Surface D	ata ReportAvg Depth to W	ater ReportWater Column	Report

### WATER COLUMN REPORT 08/20/2008

	(quarters are 1=Nw 2=NE 3=Sw 4=SE) (quarters are biggest to smallest)								Depth	Depth	Water	(in feet)
POD Number	Tws	Rng	Sec	qq	P	Zone	X	Y	Well	Water	Column	
SJ 02055	29N	14W	05	1 1					150	90	60	
SJ 01883	29N	14W	06	2 3					75	30	45	
SJ 01407	29N	14W	06	3 3	3		`	•	70	52	18	
SJ 00226	29N	14W	07	1 1	3			-	100	50	50	
SJ 00788	29N	14W	80	4 4					100	70	30	
SJ 03784 POD1	29N	14W	12	4 3	4				32	20	12	



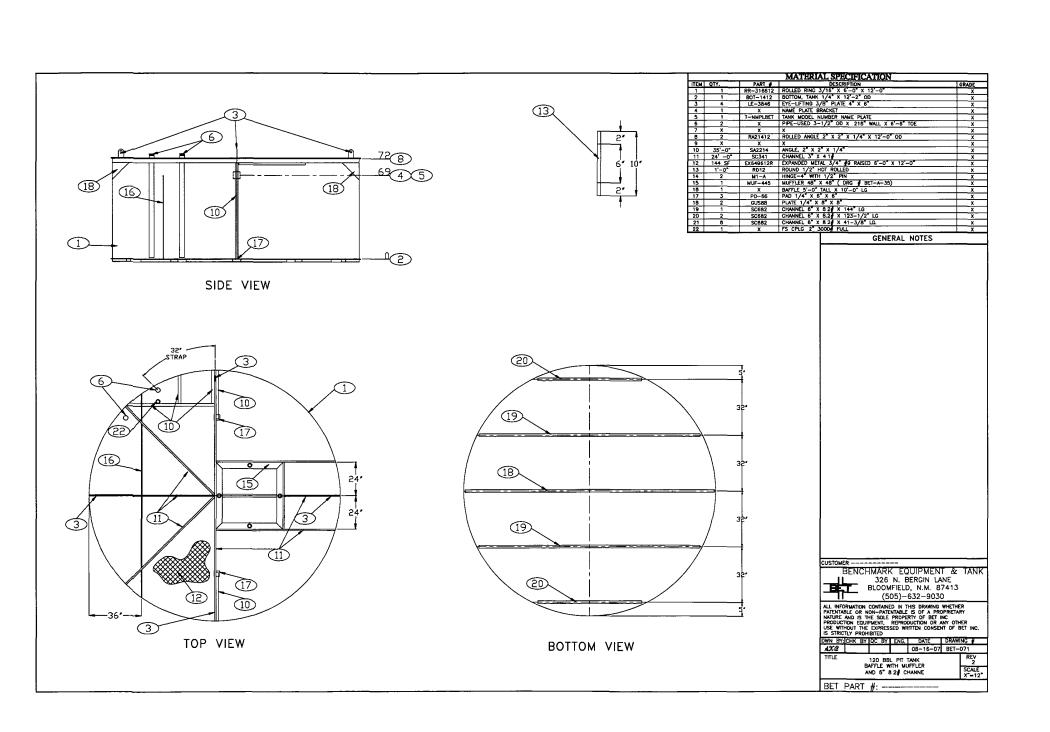


# XTO Energy Inc. San Juan Basin Below Grade Tank Design and Construction Plan

In accordance with Rule 19.15.17.11 NMAC the following information describes the design and construction of below grade tanks on XTO Energy Inc. (XTO) locations. This is XTO's standard procedure for all below grade tanks. A separate plan will be submitted for any below grade tank (BGT) which does not conform to this plan.

#### General Plan

- 1. XTO will design and construct a BGT to contain liquids and solids and prevent contamination of fresh water and protect public heath and environment.
- 2. Prior to constructing the pit, topsoil will be stockpiled in the construction zone for later use in restoration.
- 3. XTO will post a well sign, in compliance with 19.15.3.103 NMAC, on the well site prior to construction of the BGT. The sign will list the Operator on record as the operator, the location of the well site by unit letter, section, township, range, and emergency telephone numbers.
- 4. XTO shall construct all new fences utilizing 48" steel mesh field-fence (hogwire) on the bottom with two strands of barbed wire on top, or with a pipe top rail. A 6' chain link fence topped with three stands of barbed wire will be used if the well location is within 1000' of a permanent residence, school, hospital, institution or church.
- 5. XTO shall construct an expanded metal covering on top of the BGT.
- 6. XTO will ensure that a BGT is constructed of materials resistant to the BGT's particular contents and resistant to damage from sunlight.
- 7. The BGT system will have a properly constructed foundation consisting of a level base free of rocks, debris, sharp edges or irregularities to prevent punctures, cracks or indentations of the liner or tank bottom.
- 8. XTO will construct a BGT in a manner that prevents the collection of surface water run-on.
- 8. XTO will construct and use BGT that does not have double walls. The BGT sidewalls will be open for visual inspection for leaks, the BGT bottom will be elevated a minimum of 6" above the underlying ground surface and the BGT will be underlain with a geomembrane liner to divert leaked liquid to a location that can be visually inspected.
- 9. XTO will equip BGT's designed in this manner with a properly functioning automatic high-level shut-off control device and manual controls to prevent overflows.
- 10. The geomembrane liner shall consist of 30-mil flexible PVC or 60-mil HDPE liner, or an equivalent liner material that the appropriate division district office approves. The geomembrane liner shall have a hydraulic conductivity greater that 1 x 10-9 cm/sec. The geomembrane liner shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions. The liner material shall be resistant to ultraviolet light. Liner compatibility shall comply with EPA SW-846 method 9090A.
- 11. The general specifications for design and construction are attached.



# XTO Energy Inc. San Juan Basin Below Grade Tank Maintenance and Operating Plan

In accordance with Rule 19.15.17.11 NMAC the following information describes the operation and maintenance of below grade tanks on XTO Energy Inc. (XTO) locations. This is XTO's standard procedure for all below grade tanks. A separate plan will be submitted for any below grade tank (BGT) which does not conform to this plan.

### **General Plan**

- 1. XTO will operate and maintain a BGT to contain liquids and solids and prevent contamination of fresh water and protect public heath and environment.
- 2. XTO will not allow a BGT to overflow or allow surface water run-on to enter the BGT.
- 3. XTO will continuously remove any visible or measurable layer of oil from the fluid surface of a BGT in order to prevent significant accumulation of oil.
- 4. XTO will inspect the BGT monthly and maintain written records for five years.
- 5. XTO will maintain adequate freeboard to prevent overtopping of the BGT.

## XTO Energy Inc. San Juan Basin Below Grade Tank Closure Plan

In accordance with Rule 19.15.17.11 NMAC the following information describes the closure requirements of below grade tanks on XTO Energy Inc. (XTO) locations. This is XTO's standard procedure for all below grade tanks. A separate plan will be submitted for any below grade tank (BGT) which does not conform to this plan.

#### **General Plan**

- XTO will close a BGT within the time periods provided in 19.15.17.13 NMAC, or by an earlier date that the division requires because of imminent danger to fresh water, public health or the environment.
- 2. XTO will close an existing BGT that does not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC or is not included in Paragraph (5) of Subsection I of 19.15.17.11 NMAC within five years after June 16, 2008, if not retrofitted to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC.
- 3. XTO will close a permitted BGT within 60 days of cessation of the BGT's operation or as required by the transitional provisions of Subsection B of 19.15.17.17 NMAC in accordance with a closure plan that the appropriate division district office approves. The closure report will be filed on form C-144.
- 4. XTO will remove liquids and sludge from a BGT prior to implementing a closure method and will dispose of the liquids and sludge in a division-approved facility.
- 5. XTO will remove the BGT and dispose of it in a division approved facility or recycle, reuse, or reclaim it in a manner that the appropriate division district office approves.
- 6. XTO will remove any on-site equipment associated with a BGT unless the equipment is required for some other purpose.
- 7. XTO will test the solids beneath the BGT to determine whether a release has occurred. At a minimum 5 point composite sample will be collected along with individual grab samples from any area that is wet, discolored or showing other evidence of a release. Samples will be analyzed for BTEX, TPH and chlorides to demonstrate that the benzene concentration, as determined by EPA SW-846 methods 8021B or 8260B or EPA method that the division approves, does not exceed 0.2 mg/kg; total BTEX concentration, as determined by EPA SW-846 methods 8021B or 8260B or other EPA method that the division approves, does not exceed 50 mg/kg; the TPH concentration, as determined by EPA method 418.1 or other EPA method that the division approves, does not exceed 100mg/kg; and the chloride concentration, as determined by EPA method 300.1 or other EPA method that the division approves, does not exceed 250 mg/kg, or the background concentration, whichever is greater. XTO will notify the division of its results on form C-141.
- 8. If XTO or the division determines that a release has occurred, XTO will comply with 19.15.3.116 NMAC and 19.15.1.19NMAC as appropriate.
- 9. If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Paragraph (4) of Subsection E of 19.15.17.13 NMAC, XTO will backfill the excavation with compacted, non-waste containing, earthen material; construct a division prescribed soil cover; recontour and re-vegetate the site.
- 10. Notice of Closure will be given to the Aztec Division District III office between 72 hours and one week of closure via email or verbally. The notification will include the following:
  - i. Operator's name
  - Location by Unit Letter, Section, Township, and Range. Well name and API number.

- 11. All closure activities will include proper documentation and be available for review upon request and will be submitted to OCD within 60 days of closure of the BGT. Closure report will be filed on form C-144 and incorporate the following:
  - i. Details on capping and covering, where applicable
  - ii. Inspection reports
  - iii. Sampling results
- 12. Re-contouring of location will match fit, shape, line, form and texture of the surrounding area. Re-shaping will include drainage control, prevent ponding, and prevent erosion. Natural drainages will be unimpeded and water bars and/or silt traps will be placed in areas where needed to prevent erosion on a large scale. Final re-contour shall have a uniform appearance with smooth surface, fitting the natural landscape.
- 13. XTO will seed the disturbed areas the first growing season after the operator closes the pit.

  Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved methods. BLM or Forest Service stipulated seed mixes will be used on federal lands. Vegetative cover will equal 70% of the native perennial vegetative cover (un-impacted) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover through two successive growing seasons. Repeat seeding or planting will be continued until successful vegetative growth occurs.
- 14. A minimum of 4' of cover shall be achieved and the cover shall include 1' of suitable material to establish vegetation at the site, or the background thickness of topsoil, whichever is greater.
- 15. The surface owner shall be notified of XTO's proposal to close the BGT as per the approved closure plan using certified mail, return receipt requested.